

KC DX NEWS

ABØX-EDITOR

KCDXC Website: <http://www.kcdxclub.com/>

June 2019

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NEXT KCDXC MEETING: June 24- The May meeting will be held on Monday, June 24 at 6:00 p.m. at Central Resource Library, 9875 W 87th St, Overland Park, KS 66212. The program, is a video of the Malpelo DXpedition. It will be followed by the famous Pie Eating Contest at Perkins after the KCDXC meeting.

PREDICTION FOR SUNSPOT CYCLE 25

Solar experts predict the Sun's activity in Solar Cycle 25 to be below average, similar to Solar Cycle 24

PREDICTION FOR SUNSPOT CYCLE 24(National Weather Service Web Page)

April 5, 2019 - Scientists charged with predicting the Sun's activity for the next 11-year solar cycle say that it's likely to be weak, much like the current one. The current solar cycle, Cycle 24, is declining and predicted to reach solar minimum - the period when the Sun is least active - late in 2019 or 2020.

Solar Cycle 25 Prediction Panel experts said Solar Cycle 25 may have a slow start, but is anticipated to peak with solar maximum occurring between 2023 and 2026, and a sunspot range of 95 to 130. This is well below the average number of sunspots, which typically ranges from 140 to 220 sunspots per solar cycle. The panel has high confidence that the coming cycle should break the trend of weakening solar activity seen over the past four cycles.

"We expect Solar Cycle 25 will be very similar to Cycle 24: another fairly weak cycle, preceded by a long, deep minimum," said panel co-chair Lisa Upton, Ph.D., solar physicist with Space Systems Research Corp. "The expectation that Cycle 25 will be comparable in size to Cycle 24 means that the steady decline in solar cycle amplitude, seen from cycles 21-24, has come to an end and that there is no indication that we are currently approaching a Maunder-type minimum in solar activity."

The solar cycle prediction gives a rough idea of the frequency of space weather storms
(Continued on page 3)

KCDXC DXCC HONOR ROLL

Call	Mixed	CW	Phone	DIGI	IOTA	160	6 M DXCC	DX Challenge
K0CS	357	320	352			233	85	2377
AB0X	357	353	349	230		223	23	2356
W0GJ	354	344	354	292		236	20	2799
W0JLC	353	351	331			102		
N0RB	352	346	350				23	1806
K0CA	350	349	348	329	318	110		2627
NX0I	350	349	347	244		208	4	2502
N0CWR	349	348	349	312	860	179	35	2816
K0HQW	349	333	347			33		1352
K3PA	350	348	345	316		169	36	2701
KS0DX	347	318	348	129	360			2218
K4SV	346	340	344	337		301	87	2852
AC0A	348	318	348		838		15	2223
K0VXU	347	334	330	255	172	172	2	2267
K0GY	344	340	344	290			5	2312
KB0X	336							
K0AP	333	331	325	295		47	5	2353
W0QQ	333	217	331	153	151	42		1516
K0THN	329	314	284		179	1		1849
KE5BR	330	177	297	79				742
WA0WOF	330							
K4SX	331	277	314	146		52		1617
W0MB	325	229	324	251				1165
W0FS	322	270	295	230	657	181		1770
AA0MZ	312	290	292	220	532	44	20	1852
K0XM	305	248	221	20	26	87		936
AC0C	302	292	233	220		87	2	1822
KG0UA	283	277	116			4		
NS0D	263	219	142	130		3	2	833
W0XE	248	216	193	14				888
W0DR	225	188	174	5		5	7	
N9GB	203							
KS0AA	172	75	84	154		3		507
KY0F	140	2	140				1	
AA0LV	112							
W0ZAP	103	31	72	54		1	3	218
KR0CK	63	17	56			1	1	102

Red indicates member is at the top of the DXCC Honor Roll in that respective class. Total are with deletions.
 NOTE: When changes of DXCC totals are sent in to me, they are immediately updated in the next month here in the newsletter. Send to ab0x@kc.rr.com . Please only one update a month.

of all types, from radio blackouts to geomagnetic storms and solar radiation storms. It is used by many industries to gauge the potential impact of space weather in the coming years. Space weather can affect power grids, critical military, airline, and shipping communications, satellites and Global Positioning System (GPS) signals, and can even threaten astronauts by exposure to harmful radiation doses.

Solar Cycle 24 reached its maximum - the period when the Sun is most active - in April 2014 with a peak average of 82 sunspots. The Sun's Northern Hemisphere led the sunspot cycle, peaking over two years ahead of the Southern Hemisphere sunspot peak.

Powerful eruption from the surface of the sun captured on May 1, 2013. NASA

Solar cycle forecasting is a new science

While daily weather forecasts are the most widely used type of scientific information in the U.S., solar forecasting is relatively new. Given that the Sun takes 11 years to complete one solar cycle, this is only the fourth time a solar cycle prediction has been issued by U.S. scientists. The first panel convened in 1989 for Cycle 22.

For Solar Cycle 25, the panel hopes for the first time to predict the presence, amplitude, and timing of any differences between the northern and southern hemispheres on the Sun, known as Hemispheric Asymmetry. Later this year, the Panel will release an official Sunspot Number curve which shows the predicted number of sunspots during any given year and any expected asymmetry. The panel will also look into the possibility of providing a Solar Flare Probability Forecast.

"While we are not predicting a particularly active Solar Cycle 25, violent eruptions from the sun can occur at any time," said Doug Biesecker, Ph.D., panel co-chair and a solar physicist at NOAA's Space Weather Prediction Center.

An example of this occurred on July 23, 2012 when a powerful coronal mass ejection (CME) eruption missed the Earth but enveloped NASA's STEREO-A satellite. A 2013 study estimated that the U.S. would have suffered between \$600 billion and \$2.6 trillion in damages, particularly to electrical infrastructure, such as power grid, if this CME had been directed toward Earth. The strength of the 2012 eruption was comparable to the famous 1859 Carrington event that caused widespread damage to telegraph stations around the world and produced aurora displays as far south as the Caribbean.

Forecaster monitors space weather at NOAA's Space Weather Prediction Center

The Solar Cycle Prediction Panel forecasts the number of sunspots expected for solar maximum, along with the timing of the peak and minimum solar activity levels for the cycle. It is comprised of scientists representing NOAA, NASA, the International Space Environment Services, and other U.S. and international scientists. The outlook was presented on April 5 at the 2019 NOAA Space Weather Workshop in Boulder, Colo.

For the latest space weather forecast, visit <https://www.swpc.noaa.gov/>

For more information, please contact NOAA Communications Theo Stein, 303-497-0163 and Maureen O'Leary, 301-427-9000

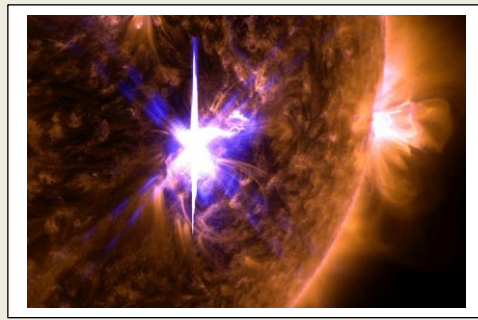
Reprinted from National Weather Service Web page

Thanks to AC0A for sending this over.

Sun's 11-Year Cycle –“Powered By Tidal Forces of Venus, Earth, Jupiter

Posted on May 28, 2019 in Astronomy, Featured Articles, Science

One of the big questions in solar physics is why the sun's activity follows a regular cycle of 11 years. Researchers discovered that the tidal forces of Venus, Earth and Jupiter influence the Sun's magnetic field, thus governing the solar cycle.



The scientists systematically compared historical observations of solar activity from the last thousand years with planetary constellations, statistically proving that the two phenomena are linked. "There is an astonishingly high level of concordance: what we see is complete parallelism with the planets over the course of 90 cycles," said Frank Stefani, lead author of the study with Helmholtz-Zentrum Dresden-Rossendorf (HZDR), an independent German research institute. "Everything points to a clocked process."

In principle, it is not unusual for the magnetic activity of a star like the sun to undergo cyclic oscillation. And yet past models have been unable to adequately explain the very regular cycle of the sun. The HZDR research team has now succeeded in demonstrating that the planetary tidal forces on the sun act like an outer clock, and are the decisive factor behind its steady rhythm.

As with the gravitational pull of the Moon causing tides on Earth, planets are able to displace the hot plasma on the sun's surface. Tidal forces are strongest when there is maximum Venus-Earth-Jupiter alignment; a constellation that occurs every 11.07 years. But the effect is too weak to significantly perturb the flow in the solar interior, which is why the temporal coincidence was long neglected.

However, the HZDR researchers then found evidence of a potential indirect mechanism that may be able to influence the solar magnetic field via tidal forces: oscillations in the Tayler instability, a physical effect that, from a certain current, can change the behavior of a conductive liquid or of a plasma. Building on this concept, the scientists developed their first model in 2016; they have since advanced this model in their new study to present a more realistic scenario.

Small trigger with a major impact: tides utilize instability

In the hot plasma of the sun, the Tayler instability perturbs the flux and the magnetic field, itself reacting very sensitively to tiny forces. A small thrust of energy is enough for the perturbations to oscillate between right-handed and left-handed helicity (the projection of the spin onto the direction of momentum). The momentum required for this may be induced by planetary tidal forces every eleven years—ultimately also setting the rhythm at which the magnetic field reverses the polarity of the sun.

"When I first read about ideas linking the solar dynamo to planets, I was very skeptical," Stefani recalled. "But when we discovered the current-driven Tayler instability undergoing helicity oscillations in our computer simulations, I asked myself: What would happen if the plasma was impacted on by a small, tidal-like perturbation? The result was phenomenal. The oscillation was really excited and became synchronized with the timing of the external perturbation."

Solar dynamo with an added touch in the standard scenario of a dynamo, the rotation of the sun and the complex motion of the solar plasma create a cyclically changing magnetic field. Two effects interact here: the plasma rotates more quickly at the sun's equator than at the poles. This leads to the omega effect: the magnetic field lines frozen in

the plasma stretch around the sun and convert the magnetic field into a field aligned almost parallel to the sun's equator. The alpha effect describes a mechanism that twists magnetic field lines, forcing the magnetic field back into a north-south direction. What exactly causes the alpha effect, however, is a subject of dispute. Stefani's model indicates that the Tayler instability is partly responsible for this. The researchers consider the most plausible scenario to be one in which a classic solar dynamo is combined with the modulations excited by the planets.

"Then the sun would be a completely ordinary, older star whose dynamo cycle, however, is synchronized by the tides," summarized Stefani. "The great thing about our new model is that we are now easily able to explain effects that were previously difficult to model, such as 'false' helicities, as observed with sunspots, or the well-known double peak in the sun's activity curve."

Besides influencing the 11-year cycle, planetary tidal forces may also have other effects on the sun. For example, it is also conceivable that they change the stratification of the plasma in the transition region between the interior radiative zone and the outer convection zone of the sun (the tachocline) in such a way that the magnetic flux can be conducted more easily. Under those conditions, the magnitude of activity cycles could also be changed, as was once the case with the Maunder Minimum, when there was a strong decline in solar activity for a longer phase.

In the long term, a more precise model of the solar dynamo would help scientists to quantify climate-relevant processes such as space weather more effectively, and perhaps even to improve climate predictions one day. The new model calculations also mean that, besides tidal forces, potentially other, hitherto neglected mechanisms would have to be integrated into the solar dynamo theory, mechanisms with weak forces that can nevertheless—as researchers now know—have a major impact. To be able to investigate this fundamental question in the laboratory, too, the researchers are currently setting up a new liquid metal experiment at HZDR.

The Daily Galaxy via HZDR

THANKS TO WØJKH & LARRY'S LIST



June 3, 2019

Kansas City DX Club Meeting Minutes

Carmack Community Room, Central Resource Library
Overland Park, KS

The May, 2019 meeting of the Kansas City DX Club was called to order by President Russ Woirhaye, KØVXU at 6:00 pm CDT (June 3, 2019 2300 UTC). (The May meeting was held a week later than usual because of the Dayton Hamvention.)

Agenda -

- Greeting and Introduction of Guests
- DXing and Contesting
- Business
- Discussion of Dayton Hamvention
- Closing World Famous Pie Eating and Tall-Tale Telling @ Perkins

Introductions -

We introduced ourselves. No guests were announced.

DXing and Contesting

DXing for June

Based on NG3K website: <http://www.ng3k.com/Misc/adxo.html>

Some good ones mentioned: 5W0H, 3D2CR, S9A, KH0N, V6K, H44MS

Contesting for May

Based on WA7BNM website: <http://www.hornucopia.com/contestcal/>

The big one this month is Field Day.

Dayton Hamvention

- Exhibits
 - The new K4 Elecraft is expensive!
 - Kenwood
 - Ten Tec
 - PC Circuits Hard Rock QRO
- Forums
 - RTTY vs FT8 contesting by Jeff, AC0C A great but controversial presentation. Jeff's main point was that FT8 contesting is fine but should not be mixed with RTTY contesting.
- Flea Market
 - Seemed like traffic was down and fewer exhibitors
- Some are considering moving the convention hotel but expect no decisions for next year.

Pileup Contest - Russ discussed the problem that arose during the contest. A software bug, as yet not completely understood, occurred that caused results to not be recorded part way into the contest. No fix was found so the contest was halted at the point of failure. The results up to that time will be posted and the leaders' name at the time of the shutdown will be placed on the new plaque of past winners. No prizes were or will be awarded. The prize donors for this year have been notified that the prizes will be kept and awarded next year.

Announcements

Election of Officers - this is coming up in November. Be ready if you wish to have an office.

Upcoming meetings:

- Rob, KE5BR, reported that the June 24 meeting will be at the Main Branch Johnson County Library at 6:00 PM as usual. Program Malpelo Dxpediton Video.
- The July 29th meeting would be at 6:15 PM to 8:00PM at the Shawnee Public Library 13811 Johnson Dr. Shawnee in Veterans Park. Program TBD.
- August 26 TBD
- September 30 Bob Heil - Heil Sound
- October 28 - Charlie Hett K0THN Projects including Paraset

If you want to update your DX status on the web site or in the newsletter contact Don, W0XE or Mike, AB0X .

If you need a ride or you know of someone who needs a ride to our meetings let Russ, K0VXU know. We would like to make sure everyone who wishes to attend can do so.

The meeting was adjourned at 7:30pm.

Charles Hett, K0THN KCDX Club Secretary

If you have heard these statements, you are officially an old DXer:

"I only got one more sunspot cycle left in me!"

"I remember that guy. His signal sucked."

"I knew the real Lance Johnson."

"Some of the best moments of my DX life were spent at Hara Arena!"

"When I run my Alpha, my hearing aid squeals! Stray RF?"

"I knew Leo Meyerson and went to Council Bluffs often."

"Do you remember when K0XM worked at Missouri Radio?"

"I remember when N0XA lived in Overland Park."

"I remember when you couldn't use an amp on 160."

"Johnny Marshall said the subdivision I live in used to be a dairy farm."

"Do you remember the big steering wheel W0AR had on the variac of his Homebrew amp?"

"I remember when Heathkit opened a store in Mission, KS."

"Gus Browning? I remember when Gus's XYL had crafts for sale at a table in Hara Arena."

"I actually used some radios from WWII military surplus on the ham bands!"

"How's that new stuff "Coax" working for you?"

"I was there the night K0BVU knocked over a Dr. Pepper into a Drake at AB0I's."

"I went to the B-A radio store downtown and in Brookside."

"I took my General license exam up in the tower of the old Federal building."

"Really, N0RB did have dark hair once and AB0X had hair."

"I don't like FT-8."

"I remember when QSLs were mailed using 3 cent stamps and gas was 19 cents a gallon."

"The FCC made a big mistake removing the CW test from license exams!"

"I remember when you had to donate to DXpeditions ahead of time just to be heard by them."

"I still use the KC Keyer from LJE on my rig!"

"Do you remember that jerk, W0 Tokyo Japan?"

"I remember when AB0I climbed a 120' tower in the middle of a thunderstorm to unstick a rotor at NIGHT!"

"A real DXer has CW Skills!"

"I got more deletions than some of these guys have countries!"

If you have heard any of the above comments, you are officially OLD! Or you are sitting next to an old DXer at the KCDXC meetings.

DX NEWS & VIEWS

BY ABØX

Summer doldrums are here! Seems like there has been little to work lately. Guess it is time to repair, replace, rebuild antennas and cut grass. The bands are really slow. Here's what's on the air:

3D2CR CONWAY REEF DXPEDITION NEWS (Rebel DX Group Update). The Rebel DX Group went QRT as 3D2CR from Conway Reef on June 9th, due to weather concerns. ClugLog reports that they made 33808 QSOs with 7734 Unique Callsigns. Breakdown by modes are: 7708/CW, 3444/SSB and 22656/FT8. Breakdown by continents are: 133/AF, 13601/AS, 4999/EU, 13175/NA, 1450/OC and 450/SA. Operators Dom/3Z9DX and Tack/JE1CKA left the island around 0000z, June 10th, and have safely returned to Fiji.

According to the Rebel's QSL Policy, all Rebel DXpeditions are via the ClubLog's OQRS for the specific DXpedition callsign. Please DO NOT send cards direct to any Rebel Team members, and also DO NOT send via the Bureau as they are not members. They will not be answered even if somehow received two years from now. The ClubLog's OQRS is the only path to receive a QSL confirmation from the Rebel DX Group. The above infos are excerpts from: <https://www.rebeldxgroup.com/qsl-online-log-info> LoTW QSOs will be confirmed only after ClubLog's OQRS are answered. There have been some reports that sponsors have received their LoTW contacts. You may also want to read Dom's comments on eham.net about the Rebel's QSL Policy at:

<https://www.eham.net/ehamforum/smf/index.php/topic,125180.msg1131122.html#msg1131122>

Per the Rebel DX Group Web page, their catamaran will need some maintenance and repairs after docking in Fiji. They mention the early expectations are for their next leg of this Pacific Tour and landing will be Banaba Island as T33T in a month or so. The Rebel DX Group also mentions on ClubLog, "Any donations received from OQRS will be used to purchase fuel for our 2nd attempt at Bouvet this November. Expected fuel costs will be over \$100,000.00 USDs, again."

It is recommended to watch both the 3D2CR (Conway Reef) and T33T (Banaba Island) on the QRZ.com Web pages and the Rebel DX Group's Web and FaceBook pages for updates:

<https://www.rebeldxgroup.com> <https://www.facebook.com/rebeldxgroup>

Also, keep an eye on 3Z9DX tracker at:

<https://share.findmespot.com/shared/faces/viewspots.jsp?glId=0tARRAqk3ftzEN8piDb2UOWqGrnOX349o>

E4, PALESTINE (Update). Janusz, SP9FIH, will once again (for the 4th time) be active as E44WE from Bethlehem (KM710Q) between July 6th and August 6th. Activity this time will be on 80/30/20/6 meters using SSB, some RTTY and possibly FT8 (F/H). QSL via his home callsign or ClubLog's OQRS. For more details and updates, see: <http://www.e4.dxpedititions.org>

FK, NEW CALEDONIA. Thomas, F4HPX, will be active as FK/F4HPX from Noumea, New Caledonia (OC-032), sometime during the first half of November. Activity will be holiday style on various HF bands using a FT-891 and KX2 into a simple wire antenna plus an Alpha EZ Military stick. He also plans to be active for a few days from Pins Island. QSL via F4HPX, direct, by the Bureau, ClubLog, LoTW or eQSL.

T6, AFGHANISTAN. Robert, S53R, will once again be in Kabul starting June 24th, and will be there for two years working with the UN World Food Program. Activity will be limited to his free time, but he plans to be on 160-6 meters using CW, SSB and the Digital modes. His callsign is not known at this time, but he was active in 2002 from Afghanistan as YA5T. Since then, the prefix YA was abandoned in 2005.

T8, PALAU. Nobuaki, JA0JHQ, will once again be active as T88PB from the VIP-Guest Hotel

in Koror City, Palau, between June 15-23rd. Activity will be on 160-6 meters using CW and 6m FT8, but with a focus on the All Asia DX Contest (June 15-16th). His equipment is an IC-7300 w/TL933 amp (about 500w) into a 3 element Yagi and DP antennas. QSL via LoTW (preferred) or direct to his home callsign. For more details and updates, see his Web page at: <http://pandasan.jimdo.com>

XU, CAMBODIA. Chenxing, BG9XD, is now active as XU7AMG from Phnom Penh until June 19th. He was active during this past weekend's All Asia DX CW Contest (June 15-16th), but will be active outside of the contest on CW and FT8. QSL via BG9XD.

XW, LAOS. Bruce, 3W3B (HS0ZCY/XU7ADF/XW1B/AA4XR), who lives in Da Nang, will once again be active as XW4XR from Vientiane between June 26th and July 7th. Activity will be on 40-6 meters (60m included) using CW, RTTY, JT65 and FT8. QSL via E21EIC and LoTW.

PROPAGATION FORECAST/REPORT (June 17-23rd).....

Jun/17th AN	Jun/20th AN	Jun/22nd AN
Jun/18th AN	Jun/21st AN	Jun/23rd AN
Jun/19th AN		

SOLAR REFERENCE KEYS/INDEXES AND GEOMAGNETIC REFERENCE

NORMALITY	GEOMAG	K Values	Alpha
-----	-----	-----	-----
AN - Above Normal	Quiet	K=0-1	0-7
HN - High Normal	Unsettled	K=2	8-15
LN - Low Normal	Active	K=3	16-29
BN - Below Normal	Minor Storm	K=4	30-49
DIS - Disturbed	Major Storm	K=5	50-99
VRD - Very Disturbed	Severe Storm	K=6-9	100-400

Meanwhile, check out the following Web sites for propagation:

- * VOACAP predication Web page at: <http://www.voacap.com/hf> and <http://www.voacap.com/prediction.html>
- * DX.QSL.NET Propagation page: <https://dx.qsl.net/propagation>
- * A daily HF radio wave propagation forecast can be found at: <https://www.facebook.com/thomasfranklingiellaw4hm>
- * SolarHam Web page: <http://www.solarham.net>
- * Radio Propagation/Space Weather/Sunspot Cycle Information at:

<http://sunspotwatch.com>

- * Monthly propagation charts between four USA regions and twelve overseas locations are at: <http://arrl.org/propagation>
- * Information and tutorials on propagation are at: <http://k9la.us>
- * Graphic propagation tool by DR2W: <http://www.dr2w.de/dx-propagation>
- * Point to point propagation at: <http://www.predtest.uk/p2p.html>
- * Realtime propagation at: <http://www.predtest.uk>
- * Also on Twitter: <https://twitter.com/GiellaW4hm>


THANKS OHIO/PENN DX BULLETIN!

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